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AMSAT NEWS SERVICE
ANS-357

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://amsat.org publishes news of Amateur Radio in space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat dot org.

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ANS-357 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 357.01
>From AMSAT HQ KENSINGTON, MD.
December 23, 2018
To All RADIO AMATEURS
BID: $ANS-357.01

AO-85 Update as of 12/19/2018

Drew Glasbrenner, KO4MA, Vice-President Operations published the following on AO-85's status as of December 19, 2018:

"As you probably know, AO-85 has had issues recently with the batteries dropping precariously low during eclipse. We think it's likely the batteries suffered degradation due to heat during previous periods of no eclipses. This has made it difficult to keep the satellite available for use without endangering the batteries. Today the nominally 3.6v pack was down to 2.8v at the end of the eclipse. That is dangerously low.

"In an effort to extend the useable life of the satellite, this evening we turned both the IHU and the transmitter off. This ceases

all transmissions, including the beacons every two minutes in both sunlit and eclipsed parts of the orbit. We will periodically turn the satellite back on for an orbit or two, in order to gather telemetry. If all goes as planned, we will turn the repeater back on during the next period of no eclipses beginning around January 24th.

"In the meantime, it is important to leave AO-85 tracked in your FoxTelem setups, in order for us to gather telemetry and keep tabs on the situation. If you do happen to hear a Veronica beacon, or either the normal repeater or the COR/no telemetry repeater, please let the list know, or send me an email or message directly.

"We appreciate your understanding and cooperation as we try to make the most of the situation. Please consider supporting the AMSAT GOLF project with your membership, and one-time or recurring donations at:
https://www.amsat.org/product-category/amsat-membership/
or
https://www.amsat.org/donate/"

[ANS thanks Drew Glasbrenner, KO4MA for the above information.]

Changes to the AMSAT-NA TLE Distribution for December 20, 2018

The identification of the 64 satellites launched by SpaceX SSO-A mission on December 3, 2018 continues. The consensus is that the spacing between unidentified satellites is growing to a point where positive identification may now be possible. In the past, two weeks after launch has been the time when distance between CubeSats increases enough to identify most individual satellites. We will see.

There are no major changes to the previous AMSAT-NA TLE Distribution (Monday, December 17, 2018) for the IDENTIFIED SSO-A launch objects at this time except for the following comments:

(1) There is a disagreement between this week's TLE distribution (Thursday, December 20, 2018) and the Space-Track data of the same date. Space-Track shows PWSat 2 as OBJECT 43814, but detailed Doppler analysis suggests that PWSat 2 is object 43775 or 43779. Hopefully this will be resolved in the next week. In the meantime, all three objects 43775, 43779, and 43814 are included in this week's distribution with PWSat 2 shown as CAT ID 43775.

(2) The following satellites still await greater separation:

- AO 95 (ex Fox 1Cliff) is shown as OBJECT 43769 but may be 43771;

- JO 97 (ex JY1Sat) is shown as OBJECT 43803 but may be 43801, downlink 145.839085 MHz.

(3) The following objects have been identified as non-amateur radio satellites and have been removed from this week's distribution:

- ICEYE-X2 1 - CAT ID 43761 (identified by Space-Track, non-amateur)

- STPSAT-5 - CAT ID 43762 (identified by Space-Track, non-amateur)

- CORVUS BC4 - NORAD CAT ID 43767 (identified by Space-Track, non-amateur)

- NEXTSAT-1 - NORAD CAT ID 43811 (identified by Space-Track,

non-amateur)

- GLOBAL-2 - NORAD CAT ID 43812 (identified by Space-Track, non-amateur)

Finally, the following satellites have been added to this week's TLE distribution:

- Reaktor Hello World is NORAD CAT ID 43743 (Downlink: 437.77527)

- CHOMPTT is NORAD CAT ID 43855 (Downlink: 437.55895)

AMSAT thanks to Nico Janssen, PA0DLO, and Alan Biddle, WA4SCA, two very diligent "telemetry fans" and to everyone else for their patience in this process.

[ANS thanks Ray Hoad, WA5QGD for the above information.]

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New Amateur Radio Packet Gear Awaits Unpacking, Installation on Space Station

New Amateur Radio on the International Space Station (ARISS) packet equipment awaits unpacking and installation on board the station after arriving in November as part of the cargo transported via a Russian 71P Progress resupply vehicle. The new packet module for NA1SS will replace the current packet gear, which has been intermittent over the past year.

"With the arrival of Progress complete, the crew has to find free time
to unpack Progress, uninstall the intermittent module, and then set up and test the replacement packet module," explained Dan Barstow, KA1ARD, senior education manager of the ISS National Laboratory (CASIS), an ARISS sponsor.

The ISS packet system was reported to have gone down in July 2017, although it unexpectedly came back to life the following summer. At the time of the failure, NASA ISS Ham Radio Project Engineer Kenneth Ransom, N5VHO, said the revived system would fill the gap until the replacement packet module was launched and installed. The packet system operates on 145.825 MHz. ARISS hardware team members on the ground were able to locate a functional duplicate of the ISS packet module that has been in use on the ISS for 17 years. ARISS said the subsequent installation will depend on the crew's busy schedule.

In an email to ARISS and other groups CASIS supports, Barstow pointed out that ARISS is an official back-up system for astronauts to talk with Mission Control in the unlikely failure of the station's primary communication systems.

Barstow said that in 2017, hams relayed nearly 89,000 packet messages via the ISS - an average of 243 every day. The statistic so intrigued and amazed Barstow that he decided to get his Amateur Radio license and gear to join in the activity.

[ANS thanks the ARRL for the above information.]

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Patrick Stoddard, WD9EWK filed the following report after a day of satellite operation board the Queen Mary anchored in Long Beach, California:

"After a few months of planning, the "AMSAT on the Queen Mary" event on December 15, 2018 was a success. Many months of planning led to the day-long satellite activity on the Verandah Deck of the Queen Mary, where the ship's club call sign W6RO was heard on several different satellites (AO-7, AO-91, AO-92, FalconSat-3, FO-29, ISS, and SO-50) during the day. There were two operators for the satellite activity - Endaf Buckley, N6UTC, and Patrick Stoddard, WD9EWK. The Associated Radio Amateurs of Long Beach, the club that operates the W6RO station, was represented by David Akins N6HHR, the W6RO Wireless Room Manager.

"The W6RO club station has its own Wireless Room near the bow of the Queen Mary. Unfortunately, a deck in that area was being used for a small ice rink, so the satellite operation had to take place at the other end of the ship. Not a big deal, as the Verandah Deck is a large open area. This was the first satellite operation by W6RO in almost 3 years, and the first time W6RO was used on the ship from a location other than the Wireless Room.

"The satellite activity was like a Field Day station, working with portable equipment (HTs, FT-817s, and handheld antennas). Being on a ship which is part museum and part hotel, there were tours passing by during the day, along with others who were curious about our event. There were flyers on a table, along with 3D-printed models of CubeSat satellites including a model of the AO-91 satellite.

"After the 8-hour event, 50 QSOs were logged with stations across North America, and the log sheets were given to David N6HHR so they could be filed with the rest of the W6RO logs. The Associated Radio Amateurs of Long Beach will be happy to answer QSL requests with a QSL card. The QSL procedure is listed on W6RO's QRZ.com entry, with one exception - the QSO number referenced on the QRZ.com entry is not required for satellite QSOs made during "AMSAT on the Queen Mary.

"Some thank-you's are in order, starting with Endaf Buckley N6UTC. Endaf started talking with the Associated Radio Amateurs of Long Beach about the possibility of having an amateur satellite event on the Queen Mary a few months ago. The W6RO Wireless Room Manager, David Akins N6HHR, worked with the Queen Mary management to get the approvals needed for this event to take place on the ship. Without their hard work this event wouldn't have taken place. We also had additional help from ARALB member Ron Frank N3HI during the day."

[ANS thanks Patrick Stoddard, WD9EWK for the above information.]

AMSAT CW Activity Day January 1, 2019 In Memory Of W3XO

You are cordially invited to participate in AMSAT's third annual CW Activity Day. It will be held from 0001 to 2400 UTC on January 1,2019.

This year's event is being held in memory of AMSAT past president Bill Tynan, W3XO. Bill operated primarily SSB, but would always come back to my CW call. Bill's experience reminds us that one need not be a CW specialist to enjoy the mode.

CW Activity Day rules are very simple: there aren't any. Just

operate CW through any amateur radio satellite. Straight keys and "bugs" are encouraged, but not required. The important thing is to get on the air and have fun, as Bill did.

[ANS thanks Ray Soifer, W2RS for the above information.]

ELaNa-XIX Successfully Launched

Rocket Lab launched its Electron rocket December 16, 2018 at 06:33 UTC with a host of CubeSats for NASA's Educational Launch of Nanosatellites (ELaNa) program.

The Electron rocket injected the CubeSats into a 500 km circular orbit at an inclination of 85 degrees. Liftoff occurred from Rocket Lab's private Launch Complex 1 (LC-1) on the Mahia Peninsula in New Zealand. Of the 13 Cubesats launched, 10 were sponsored by NASA or educational institutions from the United States:

- ALBUS - NASA Glenn Research Center, Cleveland, OH
- CeREs - NASA Goddard Space Flight Center, Greenbelt, MD
- CHOMPTT - University of Florida, Gainesville, FL
- CubeSail - University of Illinois at Urbana-Champaign, Urbana, IL
- DaVinci - North Idaho STEM Charter Academy, Rathdrum, Idaho
- ISX - SRI International/ California Polytechnic University, Menlo Park, CA
- NMTSat - New Mexico Institute of Mining and Technology, Socorro, NM
- RSat - United States Naval Academy, Annapolis, MD
- Shields-1 - NASA Langley Research Center, Hampton, VA
- STF-1 - West Virginia University / NASA IV&V, Morgantown, WV

A narrated video of the launch can be viewed at youtube.com/watch?v=F7Kr3664hJs

[ANS thanks Terry Osborne, ZL2BAC and Spaceflight.com for the above information.]

AMSAT Awards

+ Congratulations to Ruth Willet, KM4LAO for earning AMSAT Rover Award #040

[ANS thanks Bruce Paige, KK5DO for the above information.]

Upcoming Satellite Operations

+ Oahu (BL01, BL11) - December 28 to January 1, 2019
Gabe, AL6D will be heading to Oahu, Hawaii, at the end of the year. Plan is to operate from BL01 and BL10, linears and FM. Trip is dependent on availability of cockpit jump seat, so subject to cancellation. Keep an eye on the @AL6D_Alaska Twitter for further updates at https://twitter.com/AL6D_Alaska

+ Azores (HM58) - December 30 to January 2, 2019
Pedro, CU2ZG, will spend the long New Year's weekend in HM58. Pedro will operate holiday style on FM and linears. Skeds are accepted

and preferred, but keep in mind that being a family trip availability constrains might occur. Confirmations via LoTW using plain CU2ZG will be uploaded the following week, and any direct QSL will get a proper reply. Updates posted on Twitter and publicly viewable at https://twitter.com/pdsousa.

+ Point Pelee National Park, Canada (EN81) - January 1, 2019
Ron, AD0DX, and Mike, W8LID plan to active Point Pelee National Park on New Year's Day to kick of the Canadian National Parks on the Air (CNPOTA) event. Keep an eye on their Twitter accounts for further updates at https://twitter.com/ad0dx and https://twitter.com/w8lid

+ Central California (CM95, CM96, DM05, DM06) - January 5, 2019
Ron, AD0DX will activate the CM95, CM96, DM05, DM06 grid corner on January 5th. Keep an eye on the @ad0dx Twitter feed for more updates at https://twitter.com/ad0dx

+ Central California (CM95, CM96, DM05, DM06) - January 12, 2019
David, AD7DB, will be in the area of Kettleman City CA near a convergence of four grids, operating on FM satellites. Grids (maybe gridlines) will depend on the satellite passes. Operation expected from 1700 UTC through 2300 UTC. Updates will be on Twitter as the time approaches at https://twitter.com/ad7db

+ Quartzfest Arizona (DM23) - January 19-27, 2019
John, N7JY, will be operating FM satellites on a holiday schedule. He may also visit some adjoining grids. There will likely be other hams operating from the event, located a few miles south of Quartzsite AZ. QSL via LOTW, or you can send your card with SASE.

[ANS thanks Robert Bankston, KE4AL for the above information.]

ARISS News

+ ARISS Contacts for 2018 Concluded
The next ARISS contact is expected to be during the week of January 14th, 2019.

[ANS thanks ARISS for the above information.]

Satellite Shorts from All Over

+AMSAT Office Closed for the Holidays

The AMSAT Office will be closed from 20:00 UTC December 21, 2018 until January 4, 2019. Voice mail and email will not be checked. Orders placed, will be processed when the office reopens.

[ANS thanks Martha Saragovitz for the above information.]

+ AO-95 Trivia: Who is "Veronica"?

While circling the earth, a female voice, referred to as "Veronica" announces that AO-95 is in Safe Mode. The message repeats every two minutes. As for the voice you're hearing deliver it, that's a young woman named Veronica who is the daughter of Tony Monteiro, AA2TX. Tony had been AMSAT's vice president of engineering and an

unwavering advocate for the FOX series of satellites. Tony became a Silent Key in 2014 but now it is his daughter who is spreading the word that another satellite is making its way across the sky.

[ANS thanks Amateur Radio Newsline for the above information.]

+ WD9EWK Wins the December QST Cover Plaque Award

The winning article for the December 2018 QST Cover Plaque award was "Making Digital Contacts Through the ISS" by Patrick Stoddard, WD9EWK. The QST Cover Plaque Award, given to the author or authors of the most popular article in each issue, is determined by a vote of ARRL members on the QST Cover Plaque Poll web page.

[ANS thanks the ARRL for the above information.]

+ Satellite Field Operations Photos Wanted

Frank Garofalo, WA2NDV is hosting a forum at Ham Radio University to help those who may be interested in getting involved with satellite communications. While putting his presentation together he thought it might be nice to see what fellow sat ops are using to work the sats. He'll be discussing various rigs/antenna/rotator/ tracking systems and has stock photos but he thinks it would be fun to see what others are running in the real world.

If you care to share some photos please send them to Frank at wa2ndv(a)gmail.com and use HRU PIC in the subject line. Photo credits will be given if you like.

Ham Radio University is a completely voluntary function, there are no vendors or swap meet. It's all about education and fellowship. More information is available at: http://hamradiouniversity.org/

[ANS thanks the Frank Garofalo, WA2NDV for the above information.]

+ Keith Baker, KB1SK Interviewed on QSO Today

Eric, 4Z1UG interviews the eloquent and informative Keith Baker, KB1SF on a little bit of history, a little bit of AMSAT behind the scenes and a little bit of future opportunities of Amateur Radio space operations. You can listen to the 1-hour interview at: tinyurl.com/ybe3j2tj

[Editor's Note: This is a concise, no-frill interview full of interesting information.]

[ANS thanks Eric, 4Z1UG for the above information.]

+ AMSAT-DL & Qatar Television Showcase Es'hailSat

AMSAT Deutschland is at Es'hailSat, the Qatar Satellite Company at Doha, Qatar. A must see for all Es'hail-2 / AMSAT P4-A fans, Qatar Television produced a beautifully made documentation about Es'hail-1 & Es'hail-2 launch campaigns. In the second half you can see the Es'hail-2 satellite which includes the history making first geostationary amateur radio transponders. Even if you don't understand the language, just enjoy the pictures and try to spot

the antennas for the AMSAT transponder. Watch it at:
tinyurl.com/ANS-357-EshailSat-Video

[ANS thanks AMSAT-DL for the above information.]

+ Interactive Grid Square Map Available

Robert Bankston, KE4AL originally published his 488-Grid Square Map in March 2018. It has become a popular way for amateur radio satellite operators to keep track of grid squares they have worked or confirmed.

Now, Chris Tabor, K7TAB has transformed the original map (requiring manual input, Excel coloring book) into a more sophisticated, semi-automated GridMaster tracking tool.

More information on the new and improved Gridmaster Map and the free download is available at:
ke4al.wordpress.com/2018/06/29/new-and-improved-gridmaster-map/

[ANS thanks Robert Bankston, KE4AL for the above information.]

+ Dramatic power reduction on 23cm Proposed for Belgium Radio Hams

The Belgium regulator BIPT has proposed cutting to just 20 watts the permitted power level for the Amateur and Amateur-Satellite allocations in 1260-1300 MHz which is to be used by the Galileo GNSS / GPS constellation. More information at:
tinyurl.com/ANS357-Belgium-23CM

[ANS thanks AMSAT-UK for the above information.]

+ View a Cubesat Launch from Inside the ISS

Check out what CubeSat deployment from the ISS Kibo module looks like. This short but interesting video can be viewed at:
twitter.com/i/web/status/1075695199685369856

[ANS thanks the United Nations Office for Outer Space Affairs for the above information.]

+ KNACKSAT Makes Headlines in Thailand

KNACKSAT, an acronym for KMUTNB Academic Challenge of Knowledge Satellite, was one of 64 satellites launched on the SpaceX Falcon 9 rocket SSO mission on December 3, 2018. It received positive news coverage from the Bangkok Post. Read the article at:
tinyurl.com/ANS-357-KNACKSAT

[ANS thanks AMSAT for the above information.]

+ ESA Kids Website Updated

The ESA Education office is proud to launch the new and improved ESA Kids website, the online home of Paxi, the ESA Education mascot. With the new design and organization, ESA Kids is the one-stop shop for all space-related information, resources, multimedia, and activities for children. The ESA Kids platform has a new look and feel that enables users easier access to space-inspired Science, Technology,

Engineering, and Mathematics (STEM) content geared toward primary-school aged children (5-12 years) in English, German, Dutch, Spanish, French, and Italian. More information at:
http://www.esa.int/Education/New_and_improved_ESA_Kids_website
or
https://www.esa.int/kids/en/home

[ANS thanks the European Space Agency for the above information.]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of six post-secondary years in this status.

Contact Martha at the AMSAT office for additional student membership information.

Happy Holidays Around the World and 73,
This week's ANS Editor,
Frank Karnauskas, N1UW
n1uw at amsat dot org

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